

BfR believes that the intake of organophosphate compounds from fruit juice is unlikely

BfR Opinion No. 041/2007, 9 October 2007

In a pilot study in conjunction with the German Environmental Survey (GerES IV) for Children of the Federal Environmental Agency (UBA), low concentrations of various degradation products of organophosphates were detected in the urine of a majority of the children examined. One possible reason given for this exposure is the consumption of fruit juice because organic phosphorous compounds are used as pesticides on fruit crops, too. The Federal Institute for Risk Assessment (BfR) has evaluated this statement and the method used.

The pilot study in conjunction with the GerES IV for Children was conducted from 2001 to 2002. Urine samples were taken from a total of 363 children aged between 2 and 17 and examined for organophosphate degradation substances. The data collected are not representative for children in Germany.

In the opinion of BfR no causal relationship can be derived on the basis of the data collected about whether the intake of active organophosphate substances from food – or more specifically from fruit juices – was the cause for the degradation products detected in the urine. Nor is it known whether other entry pathways played a role or whether the degradation products were already formed into juice in the plant beforehand or during processing of the fruit instead of during human metabolism. To clarify this, an analysis would have had to be undertaken of the consumed food for organophosphate residues and the respective degradation products. What contradicts above all the statement of UBA is the fact that so far residues of organophosphates have only been detected in isolated cases during the annual official monitoring tests of fruit juice samples.

Based on its assessment BfR comes to the conclusion that the contamination of the children's urine cannot be explained simply by contamination of the fruit juices with organophosphate residues and further studies would be necessary in order to elucidate this.

The full version of this BfR Opinion is available in German on http://www.bfr.bund.de/cm/208/bfr_haelt_die_aufnahme_von_organophosphatverbindungen_ueber_fruchtsaft_fuer_unwahrscheinlich.pdf